PUBLIC SERVICE COMMISSION OF WISCONSIN

INFORMATION REQUIREMENTS FOR ELECTRIC TRANSMISSION CONSTRUCTION PROJECTS Version 3/20/2002

(Part 5.00)

General Instructions

Certain electric transmission construction projects require a Certificate of Public Convenience and Necessity (CPCN) application. **This document describes the basic information and format required for the Commission to review a CPCN application and to prepare either an Environmental Impact Statement (EIS) or an Environmental Assessment (EA).** There may be additional information that will be required by Commission staff. It is essential that prospective developers schedule a meeting with Commission staff prior to filing a CPCN application with the Commission. The Commission must review and take final action on a proposal within 180 days, following a 30-day application completeness review. Missing information must be provided before the applications are deemed to be complete.

In addition to hard copies, the applicant should provide disks with text in Microsoft Word. Commission staff work in Word 2002. In addition to hard copies of maps and graphics, digital versions must be submitted (see below). Additionally, the PSC requires applicants to minimize the bulk of their applications by eliminating superfluous information and bulk information not material to the case. The following examples should be used as a guide:

1) When submitting required information such as local ordinances, land use plans or other local and county planning documents, only submit those pages relevant to the information requirement, i.e. pages specific to land use or noise. If PSC staff is interested in having the entire document for context, the PSC would require the applicant to file one copy under a separate cover.

2) Duplicative information should be minimized in an application. For example, if certain information, such as a Developer's Agreement, is applicable to more than one area of the CPCN application, include the entire document as an Appendix and reference it in the application text.

3) When submitting correspondence between the applicant and state, local and federal government permitting agencies, submit only copies of "official" correspondence, i.e. letters from the applicant to an agency and the agency response to the applicant. Commission staff needs to track this correspondence to verify that the applicant has applied for permits and the status of the permit review. Do not include unofficial minutes of meetings or records of telephone conversations between the applicant/applicant's consultant and permitting agencies as these documents represent hearsay and are not considered factual information.

4) Applications are to be submitted with double-sided printed pages. This includes the text of the application as well as copies of supporting documentation submitted in the application. Exceptions to this requirement are large maps and figures (sized larger that 81/2 x 11 inches).

Important notes on digital forms of graphics:

- All required maps and other graphics must be supplied in both hard copy and digital formats.
- Line drawings must be in AutoCad *.dwg format or *.dxf format (check with Commission staff for the appropriate AutoCAD release). The preference is *.dwg.
- If Geographic Information Systems (GIS) data files are used, submit GIS data files in Shapefile format (ESRI ArcView). All GIS data submitted must be projected to Wisconsin Transverse Mercator (WTM), a projection system unique to Wisconsin and used by Wisconsin agencies. The WTM uses North American Datum (NAD) 83/91. The WTM projections are:

Projection	Transverse Mercator
Spheroid	GRS80
Scale Factor at Central Meridian	0.9996
Longitude of Central Meridian	90° W (-90°)
Latitude of Origin	0°
False Easting	520,000
False Northing	-4,480,000
Unit	meter

- Photographic images of the existing landscape and renderings of proposed facilities on the existing landscape must be submitted in a high-resolution uncompressed *.tif format (preferred) or high-resolution *.jpg format.
- Scanned documents which cannot be submitted in any other format must be submitted in *.gif format at a depth of 256 colors or less.
- When providing maps, note facility locations but do not obscure map details.

Direct questions concerning these information requirements to William A. Fannucchi of the Commission staff, at (608) 267-3594, e-mail William.Fannucchi@psc.state.wi.us.

Part 5.00 - Information Requirements for Electric Transmission Lines and Substations

A complete CPCN application must contain the following information and must be formatted as follows, or a showing must be made as to why the information is not applicable. The information requirements for the electric transmission system include transmission lines and substations.

5.00 ENGINEERING INFORMATION

5.01. Type and location of the line construction required (new construction, rebuild, reconductoring, line removal).

5.02. Size of lines (voltage, size of conductor, span length, structure height above ground, structure type, design, material, engineering drawings).

5.03. Study of the problems and possible solutions that show:

a. System normal, showing present loads served and generation output (no contingencies).

b. Single contingencies (line and transformer outages), identifying low voltage and facility overload problems.

c. Alternative electric solutions, without regard to cost.

d. Electrical losses for each alternative, peak MW and annual GWH estimates.

e. Dynamic stability analysis showing the impact of transmission and generator outages for each alternative.

5.04. Substation facilities needed at new sites and additions at existing sites.

5.05. Contractual agreements between developer and utilities to construct, finance, lease, use or own transmission facilities.[1]

5.06. Wheeling agreements, if applicable.[1]

[1] These can be submitted under the Public Service Commission's (PSC) confidentiality procedures. Call the PSC for instructions on how to do this at (608) 267-1208.

5.07. Cost.

a. Detailed estimated costs for each alternative for construction, removal and maintenance, including facilities, land, easements, demolition, and salvage.

b. Future facilities needed, and their present value costs, for each alternative (show economic assumptions).

c. Cost of electrical losses.

5.08. Anticipated construction schedule, noting any seasonal construction constraints. Provide a description of construction procedures that would be used in the construction of sections of new transmission line.

5.09. For an upgrade of an existing transmission line, name of company that would upgrade the line and what is involved in the upgrade.

5.11. Identification of company that would build and own any new lines.

5.12. For a new transmission line, description of configuration (e.g. single-circuit line on new right-of-way or a new double-circuit line on existing right-of-way).

5.13. Description of applicable transmission tariffs.

5.20 ROUTE INFORMATION

Identify and describe the alternative routes for new transmission lines. Provide the following information on each route and alternative transmission line solution. Provide at least two viable routes for each line. Also include detailed information about any new substation site or substation expansion.

5.21 General route information.

a. Detailed maps clearly showing location of lines routes and/or size and location of substation site or substation expansion.

b. Topographic maps 1:24,000 scale, plat maps for rural portions of routes, and city street maps for lines in urban areas.

c. Geographic Information Systems (GIS) data files are extremely useful to Commission staff. Applicants are encouraged to submit map information digitally in addition to paper copies. GIS data files should be in Shapefile format (ESRI ArcView). All GIS data submitted must be projected to Wisconsin Transverse Mercator (WTM), a projection system used by Wisconsin agencies that is unique to Wisconsin. The WTM uses North American Datum (NAD) 83/91.

WTM projection data:

Projection	Transverse Mercator
Spheroid	GRS80
Scale Factor at Central Meridian	0.9996
Longitude of Central Meridian	90° W (-90°)
Latitude of Origin	0°
False Easting	520,000
False Northing	-4,480,000
Unit	meter

d. Recent (within last three years) aerial photos showing routes at a scale of 1:4800 or larger (without obscuring any information). Describe any changes to the area since the photos were taken. In a rapidly developing area, air photos may need to be taken more recently than indicated above. Consult with Commission staff regarding age of photos.

e. Zoning maps and land use for the routes and/or substation sites.

f. Land use plans for the area.

g. Flood plain maps (Flood Insurance Rate Maps (FIRM)).

5.22 Detailed route information.

a. By route segment,[2] for each route, in table format: **(*See* Table 1 example.)**

i) Total length (feet and miles); total area impacted (acres) by the line and right-of-way.

ii) Size of new right-of-way (ROW) needed (width and length).

iii) Length and width of existing ROW, if any, that would be shared.

iv) Percent corridor sharing -- including total percent and shared percent of the ROW width. Type of corridor shared (e.g., existing transmission line, pipeline, county road, city street or railroad corridor). For railroad, is it active or abandoned? Who owns it? Does the owner agree to corridor sharing?

v) Land use and zoning by type.

[2] The sample map (Figure 1) enclosed shows how routes can be broken into segments. Segments are useful when two or more proposed routes cross or are very close. It is not uncommon for Commission staff to recommend a "new" route based on a different combination of segments from two separate routes or to suggest entirely new segments. In order to do this, Commission staff needs the environmental information on transmission line routes organized by segments. Route segments should be clearly marked on all maps, and a written description should be supplied for each route by segment.

b. By route segment, total length (in feet) and area (in acres) of proposed segments, based on ROW requirement, that pass through the following resource areas. Also note any changes in ROW width resulting from the proposed project **(*See* Table 2 example)**.

i) Agricultural land

ii) Forest

iii) Wetland

iv) Recreational land (parks, wildlife areas, etc.)

v) Residential land

vi) Commercial/industrial land

vii) Stream or river crossings.

viii) Information on endangered and threatened species.[3]

ix) Historic sites, including archeological sites.[4]

c. Summary of the segment information for each route. **(*See* Table 3 example.)**

d. Agricultural issues, where applicable, by segment.

i) Type of farming: pasture, row crops, or other type (e.g. orchards, tree plantations).

ii) Practices that may be affected, such as: type of irrigation used and potential interference by line; aerial seeding or spraying and potential interference with aerial applications; windbreaks; and drainage tiles.

iii) Distance of line from outbuildings such as sheds and barns.

iv) Identify parcels affected by the line that are enrolled in farmland preservation programs.

e. Description of wetlands, where applicable, by segment including **original WDNR wetland maps** for routes. Use WDNR classification system for dominant vegetation, etc. Also include stream and river crossings.

[3] This information is available from the Wisconsin Department of Natural Resources (WDNR), Bureau of Endangered Resources.

[4] This information is available from the State Historical Society of Wisconsin (SHSW), Division of Historic Preservation.

f. Description of any forest lands, where applicable, by segment.

i) Type of woodlands, dominant species, age, ownership (e.g. private, county forest). Description of basic use (e.g. recreation, timber).

ii) For route which shares road ROW, need for trees to be trimmed or removed.

5.30 SUBSTATION INFORMATION

If the project includes the construction of a substation or modifications to an existing substation, provide the following information:

5.31. Drawing or diagram showing the location, dimensions, and layout of any new substation or proposed additions to an existing substation.

5.32. Size (in acres) of the land purchase required and orientation of the substation within the purchase parcel.

5.33. Details on any proposed landscaping.

5.34. Plat and topographic maps showing the location of the substation.

5.35. Location of all power lines entering and leaving the substation. Show details on any turning structures that might impact adjacent land owners (size, type of structure, guying, etc.). Description of additional transmission lines at same location to accommodate future generation additions.

5.36. Details on any access roads required (width, length, location, etc.).

5.37. Construction procedures including erosion control techniques.

5.38. General environmental information including land use and zoning, check for impacts to wetlands, forest, agricultural land, and endangered resources.

5.40 EMF INFORMATION

Commission staff will review and conduct a random check of your calculations in order to certify that the EMF estimates you provide are reasonable. The applicants will be required to re-file calculations that are judged incorrect.

5.41. Transmission lines. Information on EMF should include the effects of any existing or proposed distribution underbuild. Also provide the following information:

a. For each segment, number of each building type within these distance categories from centerline: 0-25 feet, 25-50 feet, 50-100 feet, 100-150 feet, and 150-300 feet.[5] **(*See* Table 3 example.)**

   i) Homes

   ii) Apartments (include number of units)

   iii) Schools

   iv) Day-care centers

   v) Hospitals

b. Identify existing electric distribution facilities and distribution lines that can be underbuilt on the transmission line.

c. Detailed EMF profiles for each structure type under consideration. (Do not submit EMF profiles for each transmission structure.) If a transmission line design requires changes in structure type then submit one profile for each type. For example, in an application where the transmission design calls for a single-pole single-circuit structure in one location and a single-circuit H-Frame or a single-pole double-circuit structure in another location, the applicant will submit two EMF profiles: one profile for the single-pole single-circuit structure and another for the H-Frame or double-circuit design, whichever applies. This requirement applies to new construction, rebuilds, or reconductored lines. Provide the following EMF estimates **(*See* Table 4 example):**

   i) EMF estimates of new lines for anticipated normal load (normal load is defined as 80 percent of peak load - system normal), and peak load (100 percent peak load - system normal). Estimated load in amps for each load level.

   ii) EMF estimates in milligauss (mG) for 1 meter above the ground, and at 0 feet (centerline at mid-span), 25 feet, 50 feet, 100 feet, 150 feet, 200 feet, and 300 feet either side of the line (highest number only).

   iii) EMF estimates for the first year of operations, and at 10 years into the future (i.e. 2002 and 2012).

d. Assumptions used to model the EMF levels including:

   i) Phase angles.

   ii) Pole design diagram showing dimensions of pole arms and conductor locations. (Show conductor horizontal distance from pole and conductor distance from ground at the structure.)

[5] In the sample provided, there were no hospitals, day-care centers, schools, or nursing homes within 300 feet.

iii) Height of lowest conductor(s) at mid-span.

5.42. Existing substations. For existing substations affected by new generation and/or transmission lines, EMF measurements around the perimeter and within the substation on a diagram of the substation including:

a. Readings at each corner and mid-way along each fence. Additional readings outward from each fence reading at 25-foot intervals out to 100 feet from the substation.

b. Readings at the fence where overhead and underground lines enter and leave the substation. (Only one reading at the fence is necessary.)

c. For substations associated with a generation project, an analysis of how the new generation source will affect the current flow on the lines and what the anticipated EMF changes will be.

5.43. New power plants requiring no transmission line additions. Provide an analysis to show how the new generation source will affect the current flow on the existing transmission system. Show how the change in current flow on the transmission lines, the project is connected to, will change the EMF produced by these lines.

5.50 OTHER AGENCY CORRESPONDENCE

5.51. Copies of the applicant's correspondence with other agencies.

5.52. Copies of agency responses to the applicant's inquiries regarding the project.[6]

a. Wisconsin Department of Transportation

b. WDNR i.e., Bureau of Endangered Resources

c. Department of Agriculture, Trade, and Consumer Protection (Agricultural Impact Statement)

d. SHSW: information on all routes and sites from the state listing of historic places; SHSW recommendations (or requirements if Section 106 of the National Historic Preservation Act applies).

5.53 Permits (noting federal permits that are administered by the state):

a. WDNR permits: i.e., stream crossings.

b. List local zoning permits: variances, zoning changes required, etc. List city or local permits for construction activities (road or highway department).

[6] You must continue to provide the PSC with copies of all correspondence including communications that occurs after your application is submitted. This does not include telephone conversation logs.

c. Federal permits of any kind relating to the project, i.e. Army Corps, Federal Energy Regulatory Commission (FERC), etc.

d. Any other permits that might apply.

5.60 PROPERTY OWNER INFORMATION

5.61. Separate alphabetized lists (in Microsoft Excel or compatible program) for each of the groups described below.

a. Property owners along each transmission line route including property owners on both sides of streets, roads, or other corridors, as well as adjacent landowners on cross-country portions and property owners adjacent to any substation included in the project.

b. Public property, such as schools or other government land.

c. Clerks of cities, villages, townships, counties, and Regional Planning Commissions (RPC) affected.

d. State and federal agencies with whom the applicant is working, and local media that who have been informed about the project. (For local media, include at least one print and one broadcast).

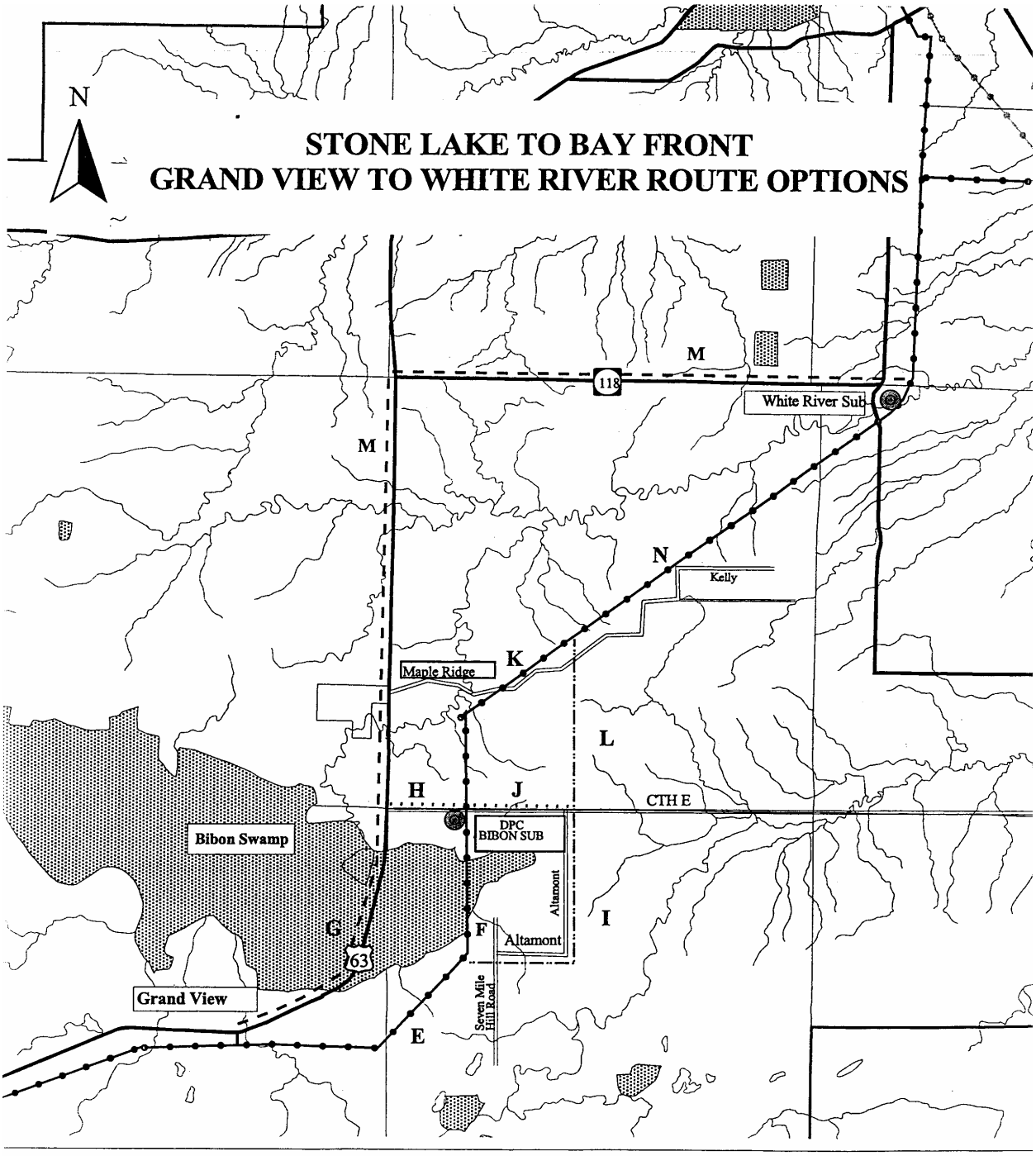
N
STONE LAKE TO BAY FRONT
GRAND VIEW TO WHITE RIVER ROUTE OPTIONS
M
118
White River Sub
M
N
Kelly
K
Maple Ridge
L
H
J
CTH E
DPC
BIBON SUB
Bibon Swamp
Altamont
I
G
F
Altamont
63
Grand View
Seven Mile Hill Road
E
USH 63 ROUTE (G, H, M)
EAST BIBBON ROUTE (E, I, J, L, N)
EXISTING ROW (E, F, K, N)
69kV TAP
1 0 1 2 Miles

FIGURE 1